

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application: **Evans** § Group Art Unit: **3724**
§
Serial No.: **10/829,269** § Examiner: **Lee, Laura Michelle**
§
Filed: **April 22, 2004** § Confirmation No.: **6459**
§
For: **Cutting Anvil and Method** § Attorney Docket No.: **03-1272**
§
§

63759

PATENT TRADEMARK OFFICE
CUSTOMER NUMBER

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

**REASONS IN SUPPORT OF APPLICANT'S PRE-APPEAL
BRIEF REQUEST FOR REVIEW**

Sir or Madam:

This document is submitted in support of the Pre-Appeal Brief Request for Review filed concurrently with a Notice of Appeal in compliance with 37 C.F.R. 41.31 and with the rules set out in the OG of July 12, 2005 for the New Appeal Brief Conference Pilot Program.

No fee or extension of time is believed due for this request. However, if any fee or extension of time for this request is required, Applicant requests that this be considered a petition therefor. The Commissioner is hereby authorized to charge any additional fee, which may be required, or credit any refund, to Deposit Account No. 18-1730.

REMARKS

Applicant hereby requests a Pre-Appeal Brief Review (hereinafter "Request") of the claims finally rejected in the Final Office Action mailed February 1, 2010. The Request is provided herewith in accordance with the rules set out in the OG dated July 12, 2005.

A. Claim Status

Claims 1, 7-8 and 25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bell et al. (US Patent No. 5,265,508) in view of Gharst et al. (US Patent No. 6,813,985), Mosiewicz et al. (US Publication 2006/0096434), Jung (US Patent No. 6,152,003) and Hreha (US Patent No. 4,077,290). Claims 2-3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bell, Gharst, Jung, Hreha, Miller (US Patent No. 5,028,052), Backlund (US Patent No. 4,060,017), Pilkington (US Patent No. 4,920,495) Gerber et al. (US Patent No. 4,373,412) and Greve (US Patent No. 5,072,640). Claims 6 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bell, Gharst, Jung, Hreha, Miller and Backlund.

B. Argument

Claim 1 is as follows:

1. A system having an anvil and an ultrasonic blade, the anvil for providing support to a backed ply material during a cutting operation by the ultrasonic blade, the backed ply material traveling in a first direction and comprising a ply and a backing, the backing being relatively more flexible than the ply, the ultrasonic blade having a cutting profile, the ultrasonic blade being operable to travel along a cutting path, the cutting path being oriented in a transverse manner relative to the first direction, the anvil comprising:
 - a rigid base for securing the anvil to a cutting assembly;
 - an inverted "T" shaped channel in the rigid base and coinciding with the cutting path;
 - a "T" shaped insert that mates with the channel;
 - a surface on the insert to support the backed ply material; and
 - a groove disposed upon the surface and coinciding with the cutting path, the groove being formed in the insert prior to any cutting operation by the ultrasonic blade and having a curved profile corresponding to a tip portion of the cutting profile of the ultrasonic blade, the groove providing support for the backing of the backed ply material during the cutting operation such that the ply and the relatively more flexible backing of the backed ply material diverge at an interface between the groove and the tip portion of the cutting profile of the ultrasonic blade, and the backing is urged into the groove during the cutting operation, the ultrasonic blade cutting the ply without cutting the backing during the cutting operation.

Applicant respectfully submits that the Examiner has not established a *prima facie* case of obviousness in rejecting claim 1 because neither Bell nor Gharst nor Mosiewicz nor Jung nor Hreha nor their combination teaches or suggests at least an anvil having "an inverted 'T' shaped

channel in the rigid base and coinciding with the cutting path", "a 'T' shaped insert that mates with the channel" or "a groove disposed upon the surface and coinciding with the cutting path, the groove being formed in the insert prior to any cutting operation by the ultrasonic blade and having a curved profile corresponding to a tip portion of the cutting profile of the ultrasonic blade, the groove providing support for the backing of the backed ply material during the cutting operation such that the ply and the relatively more flexible backing of the backed ply material diverge at an interface between the groove and the tip portion of the cutting profile of the ultrasonic blade, and the backing is urged into the groove during the cutting operation, the ultrasonic blade cutting the ply without cutting the backing during the cutting operation."

Bell discloses an ultrasonic cutting system for cutting a stock material. The cutting system includes an anvil for supporting the stock material and an ultrasonic cutting tool for cutting the stock material. In rejecting claim 1, the Examiner refers primarily to the embodiment illustrated in Fig. 9 of Bell, which is reproduced below:

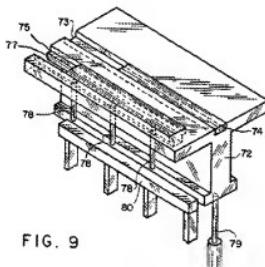


FIG. 9

Bell, in Fig. 9, illustrates an anvil 72 having a plastic strip 74 positioned within channel 73 and extending along a cutting axis. The Examiner construes the plastic strip as being an insert in an anvil, but acknowledges that the plastic strip is not a T-shaped insert in a T-shaped channel, and that it does not have a groove "disposed upon the surface and coinciding with the cutting path, the groove being formed in the insert prior to any cutting operation by the ultrasonic blade" as recited in claim 1.

With respect to the groove limitations, the Examiner states that Gharst, Jung and Mosiewicz disclose cutting operations for cutting partially through a material, that Jung discloses use of both a cutting wheel and an ultrasonic cutting tool to cut to a desired depth, that Gharst discloses utilizing a slitting groove in an anvil underneath a cutting wheel to cut a top layer of a two-ply material without cutting the backing layer, and that Mosiewicz discloses an ultrasonic

cutting tool that utilizes a channel or groove with a width slightly larger than the blade to permit the lower portion of the blade to pass below a workpiece being cut. The Examiner concludes that it would be obvious in view of Gharst, Jung and Mosiewicz to use a groove in the anvil of Bell to affect a partial cut or to protect the ultrasonic cutting blade. Applicant respectfully disagrees.

Gharst discloses a cutting device for cutting fiber insulation carried on a foil backing. The cutting device includes both a cutting blade and a scoring blade. The scoring blade is provided to score the insulation, i.e., cut partially through the insulation, so that the insulation can be more easily removed from the foil backing after the material is cut by the cutting blade.

Gharst may disclose a scoring operation to make it easier to subsequently remove insulation from a backing, but does not teach or suggest a groove that provides support for the backing of a backed ply material during a cutting operation such that the ply and the backing of the backed ply material “diverge at an interface between the groove and the tip portion of the cutting profile of the ultrasonic blade, and the backing is urged into the groove during the cutting operation, the ultrasonic blade cutting the ply without cutting the backing” during the cutting operation” as recited in claim 1.

With respect to the claim limitations of a T-shaped insert that mates with a T-shaped channel, the Examiner cites Hreha as disclosing that it is known to provide inserts of a variety of shapes. Hreha discloses a radial arm saw table top that includes a plurality of T-shaped grooves for receiving T-shaped fences. The fences serve an entirely different function than the T-shaped insert of claim 1 and do not coincide with a cutting path as recited in claim 1. Therefore, it would not be obvious to one skilled in the art to modify the plastic strip in Bell (the actual function of which does not appear to be described in Bell) to be T-shaped in view of the teachings of Hreha.

In this regard also, it is to be noted that Bell does illustrate a T-shaped stripper bar 77 in Fig. 9, and was thus aware of T-shaped components. Notwithstanding, plastic strip 74 is in the shape of a rectangular prism. Applicant respectfully submits that this further establishes that it would not have been obvious to modify strip 74 of Bell to be of a T-shape configuration.

Yet further, claim 1 recites that the backed ply material includes a ply and a backing in which the backing is relatively more flexible than the ply. As a result, during a cutting operation, the stiffer ply responds well to the ultrasonic blade and is cut, whereas the more flexible backing is able to resist the chiseling action of the blade by being allowed the ability to be pushed away (diverge) from the blade via the groove.

In finally rejecting claim 1, the Examiner recognizes that the cited references do not disclose this feature, but states that the limitations of the backing being more flexible than the ply and diverging at an interface between the groove and the tip of the cutting blade, when the

backing is urged into the groove during a cutting operation is primarily due to the design of how the two layers adhere together and is not a function of the movement of the blade over the groove, and, thus, has not given these limitations any patentable weight.

In this regard, it is to be noted that Jung uses a sensor to control blade depth. In a system such as in Jung, the blade has to be set very accurately to avoid cutting the backing of a backed ply material. The present invention, on the other hand, uses synergy from ultrasonic cutting physics and cutting groove geometry to allow the ultrasonic cutting blade to cut the ply without cutting the backing. Specifically, the present invention uses the physics of the ultrasonic cutting process (high frequency oscillating stylus type cutter) in conjunction with the geometry of the groove so that the relatively more rigid ply is kept taut and cannot resist the blade movement and deflect into the groove, and is thus cut by the blade, while the more flexible backing is able to deflect away from the blade into the groove, and not be cut.

As pointed out in the specification (paragraph [0043]), the depth of the groove is based on factors such as the material of the backing, the thickness of the backing, and the configuration of the tip of the cutting blade, and the gap between the tip of the cutting blade and the groove can be set much easier than in prior cutting assemblies (paragraph [0030]).

For at least the above reasons, the separation of the ply from the backing is, in fact, a function of the movement of the ultrasonic cutting blade over the groove, and claim limitations relating to the backed ply material diverging at an interface between the groove and the tip of the blade should have been given patentable weight in examining the claims.

For at least all the above reasons, claim 1 and the claims dependent thereon are not obvious in view of, and patentably distinguish over, the cited art in their present form.

The Pre-Appeal Brief Conference Panel is invited to call the undersigned at the below-listed telephone number if in the opinion of the Panel, such a telephone conference would expedite or aid the prosecution and examination of this application.

Respectfully submitted,

DATED: March 15, 2010

/Gerald H. Glanzman/

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